(j)337; (k)339; (l)341; (m)342 and (n)345 is substituted while preserving the human-species specific glycosylation pattern of the glycopolypeptide.

F1 CONT.

29. (Once Amended) The glycopolypeptide according to claim 27, wherein the amino acid sequence of the active portion is more than 75% identical with SEQ ID NO: [1] 2.

F2

34. (Once Amended) A purified recombinant glycopolypeptide of 65kd to 100kd that comprises 40% to 60% carbohydrate by weight and that can bind human spermatozoa at least 10 times as strong as an equivalent molar amount of mouse ZP3, wherein the glycopolypeptide is obtainable by a process comprising the steps of:

(a) transducing a cell from a human ovarian cell line with a polynucleotide that encodes a polypeptide comprising a sequence that is more than 54% homologous with SEQ ID NO: [1] 2;

(b) establishing a stable-transfected cell culture for producing the glycopolypeptide; and

(c) isolating the glycopolypeptide from the cell culture.

F3

36. (Twice Amended) The purified glycopolypeptide of claim 34, wherein the polynucleotide of step (a) encodes a polypeptide comprising a sequence from position 310 to position 345 of SEQ ID NO: [1] 2 wherein at least one amino acid has been altered while preserving the human-species specific glycosylation of the glycopolypeptide.

37. (Twice Amended) A purified glycopolypeptide that comprises carbohydrate and that can bind human spermatozoa at least 10 times as strong as an equivalent molar amount of mouse ZP3, wherein the amino acid sequence of the glycopolypeptide comprises a sequence from position 310 to position 345 of SEQ ID NO: [1] 2 wherein at least one amino acid has been altered while preserving the human-species specific glycosylation of the glycopolypeptide.

F3 cont.

38. (Twice Amended) A glycopolypeptide that can bind human spermatozoa at least 10 times as strong as an equivalent molar amount of mouse ZP3 wherein the polypeptide portion of the glycopolypeptide is smaller than 25kd and includes a core region having a sequence shown in SEQ ID NO: [1] 2 wherein at least one amino acid has been altered while preserving the human-species specific glycosylation of the glycopolypeptide.

F4

40. (Once Amended) A glycopolypeptide having a polypeptide portion that is smaller than 10kd and which can bind human spermatozoa with greater affinity than mouse spermatozoa, wherein the glycoprotein has a sequence comprising sequence position numbers 337 to 348 of SEQ ID NO: [1] 2.

F5 sub H1

44. (Once Amended) A purified glycopolypeptide of 65kd to 100kd that can bind human spermatozoa at a glycopolypeptide concentration below 1 µg/ml and induce an acrosome reaction within one hour upon binding, wherein said glycopolypeptide comprises an amino acid sequence that is more than 54% homologous to the following sequence:

SerTrpPheProValGlnGlyProAlaAspIleCysGlnCysCysAsnLys
GlyAspCysGlyThrProSerHisSerArgArg[Glu]Gln ProHisValM
etSerGlnTrpSerArgSerValSer.

F6 sub H3

47. (Once Amended) The glycoprotein of claim 45, wherein the glycoprotein comprises the following amino acid sequence:
SerTrpPheProValGlnGlyProAlaAspIleCysGlnCysCysAsnLysGlyAspCysGlyThrPro
SerHisSerArgArg[Glu]Gln ProHisValMetSerGlnTrpSerArgSerValSer.

Remarks

Claims 25-38, 40, and 42-47 are pending. Claims 27, 28, 29, 34, 36, 37, 38, and 40 have been amended to recite SEQ ID 2 instead of SEQ ID 1, which omits the Cys residue at 327, and discloses Glu instead of a Gln residue at 336. Claims 44 and 47 have been amended to replace the Glu residue at 336 with Gln. Claim 39 has been cancelled without prejudice or disclaimer.